



BI-MODE MULTIPLE UNIT – FLIRT

Greater Anglia, UK

Greater Anglia operate the East Anglia franchise which will oversee a large investment into local rail services, including a planned order for 58 FLIRT bi-mode and electric multiple-unit trains which will operate on various railway lines in East Anglia. The bi-mode order involves 24 four-car and 14 three-car trains. The FLIRT developed for Greater Anglia is a member of the service proven FLIRT which was built for several different service operators in various mission profiles and will be adapted for the UK infrastructure and the Greater Anglia requirements. The FLIRT for Greater Anglia complies with the new technical specifications for interoperability including the legislation for persons with reduced mobility. Its low floor design enables a level boarding on every passenger door and therefore optimises the passenger flow and minimises the dwell times. The bi-mode units enable an interruption-free service on electrified and non-electrified lines. The necessary power is generated by diesel engines, which are arranged in a power pack car separated from passenger saloon; this will reduce the noise and vibration impact on passengers. When running under catenary the diesel engines can be shut off, thus saving fuel, reducing the exhaust and noise emissions as well as improving the comfort for passengers in the train and of persons standing at stations. The trains are equipped with air-conditioning, multifunctional zones with bike compartments, modern passenger information systems and Wi-Fi internet connection. The new trains will commence commercial service in 2019.

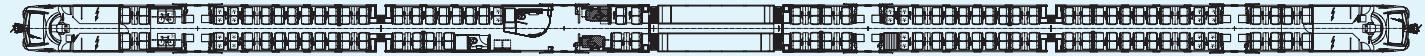
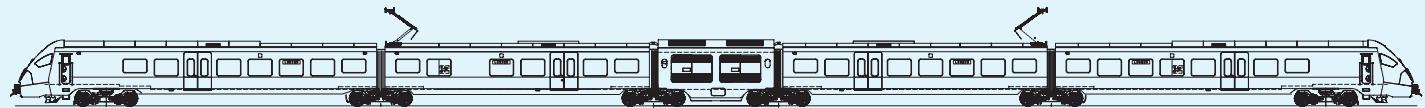
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Technical features

Technology

- 25kV/50Hz AC and diesel power supply
- Welded car body structure with extruded aluminium profiles
- Glass fiber reinforced plastic front cabin
- Air-suspended motor- and Jakobs-bogies
- High tractive efforts and accelerations
- Multiple-traction up to three trains

Comfort

- Interruption-free service on electrified and non-electrified lines
- Low floor and gap-free entrance for improved passenger flow
- Bright, passenger-friendly interior with customized design
- Air-conditioned passenger and driver compartments
- Reduced vibration and noise emission in diesel operation due to separated power pack car
- Controlled emission toilets, also suitable for PRM passengers
- Multifunctional zones with bike compartments
- Video surveillance and Wi-Fi internet access

Personnel

- Separate entrance for drivers
- Ergonomically designed driver's desk

Reliability/Availability/Maintainability/Safety

- Redundant traction chain with water-cooled IGBT power converters
- Power pack car with redundant diesel engine generators
- Easy access for maintenance
- Prepared for ETCS installation
- Vehicle control system with train bus and diagnostics computer (CAN-open bus)

Vehicle data

	BMU 4-car	BMU 3-car
Customer	Greater Anglia	Greater Anglia
Number of trains	24	14
Area serviced	East Anglia	East Anglia
Commissioning	2019	2019
Gauge	1435 mm	1435 mm
Designation	BMU4	BMU3
Supply Voltage	25kV/ 50Hz + Diesel	25kV/ 50Hz + Diesel
Axle arrangement	Bo'2'2'2'2'Bo'	Bo'2'2'2'Bo'
Standard class seats	202	144
Tip-up seat	27	23
Toilets	2	2
Floor height, low-floor	960 mm	960 mm
Entrance width	1300 mm	1300 mm
Length over coupling	80700 mm	65000 mm
Vehicle width	2720 mm	2720 mm
Power pack length	6690 mm	6690 mm
Power pack width	2822 mm	2822 mm
Bogie wheelbase	2700 mm	2700 mm
Wheel diameter motor bogie	870 mm	870 mm
Wheel diameter trailer bogie	760 mm	760 mm
Max. el. Power at wheel	2600 kW	2600 kW
Max. diesel Power installed	1920 kW	960 kW
Max. traction / e.d. braking	200 kN	200 kN
Mean acc. electric 0-40 mph	1.1 m/s ²	1.3 m/s ²
Mean acc. diesel 0-40 mph	0.9 m/s ²	0.7 m/s ²
Maximum speed	100 mph	100 mph